

AD-A049 430

ARMY ELECTRONICS COMMAND WHITE SANDS MISSILE RANGE N--ETC F/G 4/2  
14823A LANCE MISSILE NO. 3293, ROUND NO. 300 AST (5 OCTOBER 197--ETC(U)  
OCT 77

UNCLASSIFIED

DR-945

NL

| 0 |

ADA049 430



END  
DATE  
FILMED  
3 -78  
DDC

AD No. \_\_\_\_\_  
JDC FILE COPY

AD A049430

DDC  
RECEIVED  
FEB 3 1978  
B

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

DR-945  
October 1977  
AD

**METEOROLOGICAL DATA REPORT**

14823A LANCE  
MISSILE NO. 3293, ROUND NO. 300 AST  
(5 October 1977)

BY

WSMR METEOROLOGICAL TEAM

DDC  
RECEIVED  
FEB 3 1978  
B

ATMOSPHERIC SCIENCES LABORATORY  
WHITE SANDS MISSILE RANGE, NEW MEXICO

**ECOM**

UNITED STATES ARMY ELECTRONICS COMMAND

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER (14) DR-945 ✓	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) (6) 14823A Lance Missile No. 3293, Round No. 300 AST (5 October 1977).		5. TYPE OF REPORT & PERIOD COVERED
7. AUTHOR(s) WSMR Meteorological Team		6. PERFORMING ORG. REPORT NUMBER (9) Meteorological data rept.
9. PERFORMING ORGANIZATION NAME AND ADDRESS		8. CONTRACT OR GRANT NUMBER(s) (16) DA Task (17) 1T665782D127402
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Electronics Command Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico ✓		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) US Army Electronics Command Ft. Monmouth, New Jersey		12. REPORT DATE (11) October 1977
		13. NUMBER OF PAGES 40 (12) 38p.
		15. SECURITY CLASS. (of this report) UNCLASSIFIED
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) 1. Ballistics 2. Meteorology 3. Wind		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of 14823A Lance, Missile No. 3293, Round No. 300 AST, are presented in tabular form. ↑		

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

400 844

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

503



# CONTENTS

INTRODUCTION -----	PAGE 1
DISCUSSION -----	1
TABLES	
I. Surface Observations taken at LC-39 -----	1
II. Pilot-Balloon-Measured Wind Data, Release No. 1 at 1045 HRS MDT -----	2
III. Pilot-Balloon-Measured Wind Data, Release No. 2 at 1046 HRS MDT -----	4
IV. WSD Significant Level Data (Release Time: 1045 HRS MDT) -----	7
V. WSD Upper Air Data (Release Time: 1045 HRS MDT) -----	9
VI. WSD Mandatory Levels (Release Time: 1045 HRS MDT) -----	14
VII. Apache Significant Level Data (Release Time: 1045 HRS MDT) -----	15
VIII. Apache Upper Air Data (Release Time: 1045 HRS MDT) -----	17
IX. Apache Mandatory Levels (Release Time: 1045 HRS MDT) -----	23
X. Holloman Significant Level Data (Release Time: 1045 HRS MDT) -----	24
XI. Holloman Upper Air Data (Release Time: 1045 HRS MDT) -----	26
XII. Holloman Mandatory Levels (Release Time: 1045 HRS MDT) -----	33

PRECK PAGE BLANK

ACCESSION for		
NTIS	White Section	<input checked="" type="checkbox"/>
DDC	Buff Section	<input type="checkbox"/>
UNANNOUNCED		<input type="checkbox"/>
JUSTIFICATION		
BY		
DISTRIBUTION/AVAILABILITY CODES		
Dist.	AVAIL. and/or	SPECIAL
A		

## INTRODUCTION

14823A Lance, Missile Number 3293, Round Number 300 AST, was launched from LC-39, White Sands Missile Range (WSMR), New Mexico, at 1045 HRS MDT, 5 October 1977. The scheduled launch time was 1045 HRS MDT.

## DISCUSSION

Meteorological data were recorded and reduced by the WSMR Meteorological Team, Atmospheric Sciences Laboratory (ASL), WSMR, New Mexico. The data are presented in the following tabulations.

ELEVATION	4,063.75	FEET/MSL
PRESSURE	880.9	MBS
TEMPERATURE	21.7	°C
RELATIVE HUMIDITY	80	%
DEW POINT	18.1	°C
DENSITY	1,031	GM/M <sup>3</sup>
WIND SPEED/DIR	CALM	MPH/DEG
CLOUD COVER	1 3 4	Cu Ac Ci

TABLE I. SURFACE OBSERVATIONS TAKEN AT LC-39,  
1045 HRS MDT/5 OCTOBER 1977.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)	HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	CALM	CALM	2100	225	3.0
100	330	0.5	2200	210	2.5
200	330	0.5	2300	225	4.0
300	355	4.0	2400	220	4.0
400	005	2.0	2500	225	4.5
500	070	2.0	2600	225	4.5
600	170	1.5	2700	235	4.5
700	345	2.0	2800	240	4.5
800	360	3.5	2900	250	4.0
900	010	5.0	3000	300	5.5
1000	010	3.5	3100	275	6.0
1100	005	3.5	3200	280	6.0
1200	060	1.0	3300	250	7.0
1300	035	2.0	3400	275	6.0
1400	360	3.5	3500	290	7.0
1500	305	2.0	3600	260	8.0
1600	305	2.5	3700	255	9.0
1700	320	3.5	3800	295	9.5
1800	290	3.5	3900	315	12.0
1900	010	3.5	4000	315	12.0
2000	300	3.0	4100	310	11.5

TABLE II. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 1  
RELEASED FROM LC-39, AT 1045 HRS MDT/5 OCTOBER 1977  
14823A LANCE, MISSILE NO. 3293, ROUND NO. 300 AST

PIBAL RELEASE POINT WSTM COORDINATES:

X = 530,938.82    Y = 186,564.96    Z = 4,063.75

APPROXIMATELY: 1.5 MILES SOUTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.



HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
4200	310	11.0
4300	310	11.5
4400	315	12.0
4500	315	12.0
4600	325	11.0
4700	325	11.5
4800	325	12.0
4900	325	11.5
5000	325	11.5
5100	325	10.0
5200	340	9.0
5300	345	11.0
5400	335	9.0
5500	335	11.0
5600	330	11.5

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
5700	330	9.0
5800	320	8.0
5900	310	7.0
6000	305	7.0
6100	295	4.5
6200	300	4.5
6300	320	4.0
6400	325	5.0
6500	325	4.0
6600	290	3.5
6700	310	4.5
6800	325	7.0
6900	325	9.0
7000	320	5.0

TABLE II. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)	HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	CALM	CALM	2100	200	5.5
100	325	0.5	2200	220	5.0
200	325	0.5	2300	220	6.0
300	305	0.5	2400	220	5.5
400	055	0.5	2500	215	6.0
500	180	2.0	2600	235	5.0
600	140	1.5	2700	225	4.5
700	215	1.5	2800	295	6.0
800	155	3.0	2900	245	4.0
900	185	2.5	3000	240	6.5
1000	180	4.5	3100	275	6.0
1100	180	3.0	3200	265	5.5
1200	340	3.0	3300	295	6.5
1300	310	1.5	3400	280	8.0
1400	000	0.0	3500	290	9.0
1500	265	2.5	3600	310	11.0
1600	280	3.0	3700	320	13.0
1700	245	2.5	3800	330	12.0
1800	285	3.5	3900	310	12.0
1900	295	4.0	4000	315	13.0
2000	225	4.0	4100	315	11.0

TABLE III. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 2  
RELEASED FROM LC-39, AT 1048 HRS MDT/5 OCTOBER 1977  
14823A LANCE, MISSILE NO. 3293, ROUND NO. 300 AST

PIBAL RELEASE POINT WSTM COORDINATES:

X = 530,938.82 Y = 186,564.96 Z = 4,063.75

APPROXIMATELY: 1.5 MILES SOUTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.



HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
4200	310	10.0
4300	295	7.0
4400	325	11.0
4500	335	15.0
4600	330	12.0
4700	330	10.0
4800	335	12.0
4900	335	13.0
5000	330	11.0
5100	330	11.0
5200	320	8.0
5300	325	7.0
5400	325	7.5
5500	345	5.5
5600	335	5.5
5700	325	8.5
5800	320	10.0
5900	310	6.0
6000	305	3.5
6100	315	6.0
6200	305	4.0
6300	290	4.5
6400	295	2.5
6500	270	2.5

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
6600	295	2.5
6700	260	3.0
6800	315	4.5
6900	270	4.0
7000	310	4.5
7100	285	5.0
7200	290	4.5
7300	330	4.5
7400	315	6.0
7500	320	5.0
7600	320	8.5
7700	330	7.5
7800	315	6.0
7900	330	5.5
8000	335	8.5
8100	295	5.5
8200	265	5.5
8300	300	7.0
8400	295	6.5
8500	255	3.5
8600	250	5.0
8700	315	7.5
8800	320	7.5
8900	315	7.0

TABLE III. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
9000	295	6.5
9100	295	5.5
9200	310	6.0
9300	295	5.5
9400	320	6.0
9500	320	6.5
9600	285	4.4
9700	300	5.0
9800	320	7.0
9900	270	4.0
10000	260	1.0
10100	320	3.5
10200	310	4.5
10300	315	6.0
10400	320	5.0
10500	285	4.0

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
10600	290	2.5
10700	255	3.5
10800	265	2.5
10900	325	5.0
11000	315	5.5
11100	230	3.0
11200	245	3.5
11300	320	6.5
11400	305	6.0
11500	320	6.0
11600	310	4.0
11700	295	4.5
11800	300	6.0
11900	315	8.0
12000	275	9.0

TABLE III. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

STATION ALTITUDE 3989.00 FEET MSL  
 5 OCT. 77  
 ASCENSION NO. 723

SIGNIFICANT LEVEL DATA  
 2780020723  
 WHITE SANDS  
 TABLE IV.

GEODETIC COORDINATES  
 32.40043 LAT NEG  
 106.37033 LON NEG

PRESSURE GEOMETRIC ALTITUDE		TEMPERATURE		REL. HUM. PERCENT
MILLIBARS	MSL FEET	AIR DEGREES	DEWPOINT CENTIGRADE	
882.8	3989.0	21.1	16.3	74.0
872.8	4317.0	20.0	15.0	73.0
850.0	5064.9	17.5	13.6	78.0
791.8	7047.4	14.1	11.1	82.0
773.8	7685.5	13.9	7.7	66.0
700.0	10438.3	8.8	4.8	76.0
676.8	11353.7	8.0	2.3	67.0
633.8	13118.5	3.5	-1.1	77.0
593.8	14849.2	1.5	-6.3	56.0
576.8	15615.1	.2	-7.3	57.0
568.8	15982.1	-1.1	-12.7	38.0
554.3	16658.3	-1.7	-7.4	65.0
516.8	18475.3	-5.1	-16.9	39.0
500.0	19323.3	-7.1	-17.5	43.0
481.8	20266.9	-9.5	-16.4	57.0
459.8	21446.9	-11.0	-28.0	23.0
447.3	22138.1	-12.8	-30.5	21.0
432.8	22958.8	-14.6	-24.6	42.0
413.8	24068.6	-16.8	-18.8	84.0
400.0	24901.1	-18.3	-23.8	62.0
371.8	26676.5	-21.9	-33.5	34.0
326.3	29776.1	-29.3	-36.8	48.0
315.8	30537.9	-31.2	-40.0	41.0
310.8	30908.0	-31.3	-47.2	19.0
300.0	31726.2	-32.4	-49.6	16.0
250.0	35854.3	-41.4		
234.3	37283.5	-44.9		
200.0	40678.9	-53.5		
150.0	46547.2	-66.7		
119.8	50901.6	-74.8		



STATION ALTITUDE 3989.00 FEET MSL  
 5 OCT. 77  
 ASCENSION NO. 723

SIGNIFICANT LEVEL DATA  
 2780020723  
 WHITE SANDS  
 TABLE IV. (CONT)

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR	DEWPOINT DEGREES	REL. HUM. PERCENT
MILLIBARS	MSL FEET		CENTIGRADE	
112.8	52051.0		-72.4	
100.0	54351.3		-74.6	
70.0	61216.2		-69.1	
63.3	63205.7		-63.4	
54.8	66114.9		-60.6	
50.0	67998.9		-55.4	
43.8	70732.6		-58.5	
39.0	73127.6		-55.6	

UPPER AIR DATA  
2780020723  
WHITE SANDS  
TABLE V.

STATION ALTITUDE 3989.00 FEET MSL  
5 OCT. 77  
ASCENSION NO. 723

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	882.8	21.1	16.3	74.0	1036.9	670.9	.0	.0	1.000312
4000.0	882.5	21.1	16.2	74.0	1036.6	670.9	203.0	.0	1.000312
4500.0	867.2	19.4	14.7	74.2	1025.1	668.8	203.0	1.0	1.000303
5000.0	852.0	17.7	13.7	77.6	1013.2	666.8	203.0	2.0	1.000296
5500.0	836.9	16.8	13.1	78.9	998.8	665.6	203.0	3.0	1.000291
6000.0	822.0	15.9	12.4	79.9	984.1	664.5	220.5	4.0	1.000285
6500.0	807.5	15.0	11.8	80.9	969.7	663.5	246.9	5.9	1.000279
7000.0	793.1	14.2	11.1	81.9	955.5	662.5	270.1	8.8	1.000274
7500.0	779.0	14.0	8.7	70.7	940.0	661.9	283.3	12.1	1.000261
8000.0	765.0	13.3	7.4	67.1	925.6	661.1	294.1	11.9	1.000254
8500.0	751.2	12.4	6.9	69.0	911.9	660.0	304.5	10.9	1.000249
9000.0	737.6	11.5	6.4	70.8	898.4	658.9	318.0	9.1	1.000245
9500.0	724.3	10.5	5.8	72.6	885.2	657.8	318.6	9.1	1.000241
10000.0	711.3	9.6	5.3	74.4	872.1	656.7	314.8	8.7	1.000237
10500.0	698.4	8.7	4.6	75.4	859.1	655.6	304.3	8.1	1.000232
11000.0	685.7	8.3	3.3	70.5	845.0	655.0	295.3	6.9	1.000225
11500.0	673.1	7.6	2.1	67.8	831.8	654.1	284.1	5.8	1.000219
12000.0	660.7	6.4	1.4	70.7	820.3	652.6	276.0	5.5	1.000216
12500.0	648.6	5.1	.7	73.5	809.0	651.0	267.8	5.3	1.000212
13000.0	636.6	3.8	.0	76.3	797.8	649.5	260.7	5.5	1.000208
13500.0	624.8	3.1	-1.4	72.4	785.3	648.5	261.9	4.4	1.000202
14000.0	613.1	2.5	-3.1	66.3	772.6	647.8	269.9	3.2	1.000196
14500.0	601.7	1.9	-5.0	60.2	760.0	647.0	285.1	3.3	1.000190
15000.0	590.4	1.2	-6.5	56.2	747.8	646.1	285.2	4.6	1.000186
15500.0	579.3	.4	-7.1	56.8	736.1	645.1	280.0	6.9	1.000182
16000.0	568.4	-.1	-12.5	38.7	724.2	644.2	280.1	7.9	1.000173
16500.0	557.7	-1.3	-8.4	58.7	713.1	643.0	280.1	8.6	1.000176
17000.0	547.0	-2.3	-9.0	60.1	702.2	641.8	278.5	8.3	1.000172
17500.0	536.6	-3.3	-11.5	53.0	691.4	640.6	273.1	8.4	1.000167
18000.0	526.4	-4.2	-14.1	45.8	680.8	639.4	264.6	8.8	1.000162



GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

UPPER AIR DATA  
2780020723  
WHITE SANDS  
TABLE V. (CONT)

STATION ALTITUDE 3989.00 FEET MSL  
5 OCT. 77  
ASCENSION NO. 723  
1045 HRS MDT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TN)	ATA SPEED KNOTS	INDEX OF REFRACTION
18500.0	516.3	-5.2	39.1	670.3	638.1	257.6	9.7	1.000158
19000.0	506.3	-6.3	41.5	660.3	636.7	252.4	10.7	1.000155
19500.0	496.5	-7.5	45.6	650.5	635.3	248.8	11.6	1.000153
20000.0	486.9	-8.8	53.0	640.8	633.8	247.6	11.9	1.000152
20500.0	477.4	-9.8	50.3	630.7	632.6	248.6	12.5	1.000148
21000.0	468.0	-10.4	35.9	620.1	631.7	252.9	13.9	1.000144
21500.0	458.8	-11.1	22.8	609.8	630.8	256.4	17.0	1.000139
22000.0	449.8	-12.4	21.4	600.7	629.2	258.6	21.0	1.000137
22500.0	440.8	-13.6	30.3	591.4	627.8	257.7	24.5	1.000135
23000.0	432.1	-14.7	43.6	581.9	626.6	256.3	27.7	1.000134
23500.0	423.4	-15.7	62.5	572.3	625.4	252.4	29.6	1.000134
24000.0	415.0	-16.7	81.4	562.9	624.3	249.5	31.7	1.000133
24500.0	406.6	-17.6	72.6	553.6	623.1	247.8	34.0	1.000130
25000.0	398.4	-18.5	60.4	544.5	621.9	247.7	35.1	1.000126
25500.0	390.3	-19.5	52.6	535.7	620.6	248.8	35.4	1.000123
26000.0	382.3	-20.5	44.7	526.9	619.4	248.7	35.8	1.000121
26500.0	374.5	-21.5	36.8	518.3	618.1	248.3	36.2	1.000118
27000.0	366.8	-22.7	35.5	509.9	616.7	248.0	35.1	1.000116
27500.0	359.1	-23.9	37.7	501.7	615.2	247.6	35.0	1.000114
28000.0	351.6	-25.1	40.0	493.6	613.7	247.1	35.8	1.000112
28500.0	344.3	-26.3	42.2	485.7	612.2	247.1	38.4	1.000110
29000.0	337.1	-27.4	44.5	477.9	610.8	247.5	40.5	1.000108
29500.0	330.1	-28.6	46.8	470.2	609.3	248.6	41.1	1.000106
30000.0	323.2	-29.9	45.9	462.6	607.7	249.4	41.2	1.000105
30500.0	316.3	-31.1	41.3	455.2	606.2	250.0	41.0	1.000103
31000.0	309.6	-31.4	18.7	446.1	605.7	251.0	42.2	1.000100
31500.0	302.9	-32.1	16.8	437.8	604.9	252.0	43.6	1.000098
32000.0	296.4	-33.0	14.9**	429.9	603.7	254.1	47.0	1.000096
32500.0	289.9	-34.1	13.0**	422.5	602.4	255.5	50.2	1.000094
33000.0	283.6	-35.2	11.1**	415.1	601.0	255.0	52.3	1.000093

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.00 FEET MSL  
 5 OCT. 77  
 ASCENSION NO. 723

UPPER AIR DATA  
 2780020723  
 WHITE SANDS  
 TABLE V. (CONT)

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TN)	ATA SPEED KNOTS	INDEX OF REFRACTION
33500.0	277.4	-36.3	9.1**	407.9	599.6	252.7	53.4	1.000091
34000.0	271.3	-37.4	7.2**	400.9	598.2	247.0	53.3	1.000009
34500.0	265.4	-38.4	5.2**	393.9	596.8	244.0	54.0	1.000009
35000.0	259.6	-39.5	3.3**	387.1	595.4	243.2	55.2	1.000009
35500.0	253.9	-40.6	1.4**	380.5	594.1	244.1	55.4	1.000009
36000.0	248.4	-41.8		373.9	592.6	245.9	55.1	1.000009
36500.0	242.8	-43.0		367.5	591.0	246.4	57.2	1.000009
37000.0	237.3	-44.2		361.1	589.5	246.6	59.8	1.000009
37500.0	231.9	-45.4		354.9	587.9	247.0	60.7	1.000009
38000.0	226.6	-46.7		348.6	586.2	247.5	61.2	1.000009
38500.0	221.4	-48.0		342.5	584.6	247.0	58.7	1.000009
39000.0	216.3	-49.2		336.5	582.9	246.3	55.8	1.000009
39500.0	211.3	-50.5		330.6	581.3	247.1	59.1	1.000009
40000.0	206.4	-51.8		324.9	579.6	247.7	61.7	1.000009
40500.0	201.7	-53.0		319.2	578.0	247.5	62.0	1.000009
41000.0	196.9	-54.2		313.3	576.4	247.8	62.3	1.000009
41500.0	192.1	-55.3		307.3	574.9	249.2	62.7	1.000009
42000.0	187.5	-56.5		301.4	573.5	251.4	63.0	1.000009
42500.0	182.9	-57.6		295.6	572.0	254.5	63.6	1.000009
43000.0	178.5	-58.7		290.0	570.5	255.6	65.2	1.000009
43500.0	174.2	-59.8		284.4	569.0	255.6	67.4	1.000009
44000.0	170.0	-61.0		279.0	567.5	256.4	69.8	1.000009
44500.0	165.8	-62.1		273.7	566.0	257.5	72.3	1.000009
45000.0	161.8	-63.2		268.5	564.5	258.6	76.6	1.000009
45500.0	157.9	-64.3		263.4	562.9	259.6	81.5	1.000009
46000.0	154.1	-65.5		258.5	561.4	259.9	80.7	1.000009
46500.0	150.3	-66.6		253.6	559.9	260.0	77.3	1.000009
47000.0	146.5	-67.5		248.3	558.6	260.7	71.2	1.000009
47500.0	142.8	-68.5		243.0	557.4	262.0	63.6	1.000009
48000.0	139.2	-69.4		237.9	556.1	261.6	64.0	1.000009

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.



UPPER AIR DATA  
2780020723  
WHITE SANDS  
TABLE V. (CONT)

STATION ALTITUDE 3989.00 FEET MSL  
5 OCT. 77 1045 HRS MDT  
ASCENSION NO. 723

GEODETIC COORDINATES  
32.40043 LAT NEG  
106.37033 LON NEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	KNOTS	DIRECTION DEGREES(TN)	SPEED KNOTS	
48500.0	135.6	-70.3			232.9	554.8		260.4	68.0	1.000052
49000.0	132.2	-71.3			228.0	553.5		259.2	68.8	1.000051
49500.0	128.8	-72.2			223.3	552.3		258.1	68.4	1.000050
50000.0	125.5	-73.1			218.6	551.0		258.1	63.8	1.000049
50500.0	122.3	-74.1			214.0	549.7		258.9	56.8	1.000048
51000.0	119.2	-74.6			209.1	549.0		260.3	50.1	1.000047
51500.0	116.1	-73.6			202.6	550.4		262.6	43.7	1.000045
52000.0	113.1	-72.5			196.4	551.8		264.6	39.0	1.000044
52500.0	110.2	-72.8			191.6	551.4		265.7	36.4	1.000043
53000.0	107.3	-73.3			187.1	550.7		266.4	35.1	1.000042
53500.0	104.6	-73.8			182.7	550.1		266.3	35.4	1.000041
54000.0	101.9	-74.3			178.4	549.4		266.3	36.0	1.000040
54500.0	99.2	-74.5			174.0	549.1		266.2	37.1	1.000039
55000.0	96.7	-74.1			169.2	549.7		266.5	37.3	1.000038
55500.0	94.2	-73.7			164.5	550.2		267.3	36.0	1.000037
56000.0	91.8	-73.3			160.0	550.8		268.3	34.5	1.000036
56500.0	89.4	-72.9			155.6	551.3		270.2	30.2	1.000035
57000.0	87.1	-72.5			151.3	551.9		272.9	26.0	1.000034
57500.0	84.9	-72.1			147.1	552.4		276.6	22.1	1.000033
58000.0	82.7	-71.7			143.0	553.0		282.0	18.4	1.000032
58500.0	80.6	-71.3			139.1	553.5		286.4	16.6	1.000031
59000.0	78.5	-70.9			135.3	554.1		289.5	16.1	1.000030
59500.0	76.5	-70.5			131.5	554.6		290.3	15.8	1.000029
60000.0	74.6	-70.1			127.9	555.2		287.2	15.9	1.000028
60500.0	72.7	-69.7			124.4	555.7		283.9	15.6	1.000028
61000.0	70.8	-69.3			121.0	556.3		279.0	12.8	1.000027
61500.0	69.0	-68.3			117.3	557.6		271.4	10.2	1.000026
62000.0	67.3	-66.9			113.6	559.6		261.7	5.7	1.000025
62500.0	65.6	-65.4			110.0	561.5		205.2	2.0	1.000024
63000.0	64.0	-64.0			106.5	563.4		178.4	3.8	1.000024

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

UPPER AIR DATA  
2780020723  
WHITE SANDS  
TABLE V. (CONT)

STATION ALTITUDE 3989.00 FEET MSL  
5 OCT. 77  
ASCENSION NO. 723 1045 HRS MDT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
63500.0	62.4	-63.1		103.5	564.6	190.2	6.4	1.000023
64000.0	60.9	-62.6		100.7	565.2	200.4	9.4	1.000022
64500.0	59.4	-62.2		98.0	565.9	211.7	13.4	1.000022
65000.0	57.9	-61.7		95.4	566.5	217.7	17.3	1.000021
65500.0	56.5	-61.2		92.9	567.2	224.9	14.7	1.000021
66000.0	55.1	-60.7		90.4	567.8	235.0	12.4	1.000020
66500.0	53.8	-59.5		87.7	569.4	255.0	9.2	1.000020
67000.0	52.5	-58.2		85.1	571.2	291.1	7.7	1.000019
67500.0	51.2	-56.8		82.5	573.1	318.8	6.8	1.000018
68000.0	50.0	-55.4		80.0	574.9	359.3	3.1	1.000018
68500.0	48.8	-56.0		78.3	574.1	75.5	4.5	1.000017
69000.0	47.6	-56.5		76.6	573.4	75.4	2.1	1.000017
69500.0	46.5	-57.1		75.0	572.6	256.9	.2	1.000017
70000.0	45.4	-57.7		73.4	571.9	286.7	2.8	1.000016
70500.0	44.3	-58.2		71.8	571.1	295.7	5.8	1.000016
71000.0	43.2	-58.2		70.1	571.2			1.000016
71500.0	42.2	-57.6		68.2	572.0			1.000015
72000.0	41.2	-57.0		66.4	572.8			1.000015
72500.0	40.2	-56.4		64.6	573.6			1.000014
73000.0	39.2	-55.8		62.9	574.4			1.000014



STATION ALTITUDE 3989.00 FEET MSL  
5 OCT. 77  
ASCENSION NO. 723

MANDATORY LEVELS  
2780020723  
WHITE SANDS  
TABLE VI.

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REF. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES(T)	SPEED KNOTS
850.0	5064.	17.5	13.6	78.	203.0	2.2
800.0	6760.	14.6	11.5	81.	259.2	7.2
750.0	8548.	12.3	6.8	69.	305.7	10.6
700.0	10438.	8.8	4.8	76.	305.6	8.1
650.0	12445.	5.2	.8	73.	268.4	5.3
600.0	14577.	1.8	-5.2	59.	287.7	3.3
550.0	16867.	-2.1	-8.3	62.	278.9	8.4
500.0	19332.	-7.1	-17.5	43.	249.8	11.3
450.0	22000.	-12.4	-29.9	21.	258.7	21.2
400.0	24919.	-18.3	-23.8	62.	247.6	35.0
350.0	28147.	-25.3	-34.8	40.	247.1	36.7
300.0	31759.	-32.4	-49.6	16.	253.3	45.7
250.0	35898.	-41.4			245.7	55.1
200.0	40738.	-53.5			247.3	62.2
175.0	43518.	-59.6			255.6	67.8
150.0	46628.	-66.7			260.1	75.2
125.0	50188.	-73.3			258.6	59.5
100.0	54467.	-74.6			266.2	37.3
80.0	58761.	-71.2			289.0	16.2
70.0	61366.	-69.1			270.5	9.9
60.0	64449.	-62.4			213.8	14.7
50.0	68188.	-55.4			68.0	3.9
40.0	72821.	-56.2				

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.



GEODETIC COORDINATES  
32.62700 LAT DEG  
106.39352 LON DEG

SIGNIFICANT LEVEL DATA  
2780050104  
APACHE  
TABLE VII.

STATION ALTITUDE 3951.40 FEET MSL  
5 OCT. 77  
ASCENSION NO. 104

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES	DEWPOINT CENTIGRADE	
884.0	21.5	16.5	73.0
871.3	19.6	15.3	76.0
850.0	17.2	15.0	87.0
796.8	13.9	11.8	87.0
786.8	12.9	9.0	77.0
764.8	14.2	7.0	62.0
700.0	9.8	4.4	69.0
648.3	5.2	.4	71.0
610.3	2.3	-3.6	65.0
601.3	1.8	-7.8	49.0
575.8	-.3	-8.9	52.0
558.8	-1.2	-14.3	36.0
540.3	-3.1	-7.8	70.0
500.0	-7.0	-18.0	41.0
475.3	-10.2	-18.1	52.0
452.8	-11.9	-32.5	16.0
421.8	-15.4	-34.8	17.0
407.8	-17.7	-33.7	23.0
400.0	-19.8	-22.3	80.0
393.8	-19.4	-23.5	70.0
385.3	-20.3	-32.0	34.0
365.3	-22.9	-34.1	35.0
346.3	-26.1	-40.2	25.0
339.8	-27.4	-38.7	33.0
333.8	-28.0	-32.5	65.0
319.8	-30.5	-36.4	56.0
313.8	-31.9	-35.9	67.0
300.0	-32.4	-49.0	16.0
250.0	-41.3		
200.0	-53.1		

GEODETIC COORDINATES  
32.62700 LAT DEG  
106.39352 LON DEG

SIGNIFICANT LEVEL DATA  
2780050104  
APACHE  
TABLE VII. (CONT)

STATION ALTITUDE 3951.40 FEET MSL  
5 OCT. 77  
ASCENSION NO. 104  
1045 HRS MDT

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
150.0	46547.8	-67.2		
133.8	48773.2	-72.2		
120.8	50729.2	-74.1		
114.3	51767.0	-72.4		
100.0	54342.1	-74.2		
89.3	56492.6	-74.7		
70.0	61199.7	-67.2		
50.0	68001.0	-56.0		
30.0	78642.2	-53.9		
20.0	87214.1	-49.1		
15.0	93386.3	-47.0		

GEODETIC COORDINATES  
32.62700 LAT DEG  
106.39352 LON DEG

UPPER AIR DATA  
2780050104  
APACHE  
TABLE VIII.

STATION ALTITUDE 3951.40 FEET MSL  
5 OCT. 77  
ASCENSION NO. 104  
1045 HRS MDT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3951.4	884.0	21.5	73.0	1036.8	671.4	.0	.0	1.000313
4000.0	882.5	21.3	73.4	1035.9	671.2	321.9	.0	1.000312
4500.0	867.2	19.1	78.1	1025.7	668.6	321.9	.5	1.000306
5000.0	852.0	17.4	86.0	1013.6	666.6	321.9	1.0	1.000303
5500.0	836.9	16.4	87.0	999.5	665.4	321.9	1.5	1.000296
6000.0	822.0	15.5	87.0	985.1	664.2	297.8	3.0	1.000289
6500.0	807.5	14.6	87.0	971.0	663.1	282.5	6.5	1.000283
7000.0	793.1	13.5	83.3	957.8	661.7	283.4	8.3	1.000273
7500.0	778.9	13.4	71.7	942.0	661.2	287.3	9.3	1.000261
8000.0	765.0	14.2	62.1	922.8	662.0	300.4	8.4	1.000252
8500.0	751.2	13.3	63.4	909.1	661.0	315.8	7.6	1.000247
9000.0	737.7	12.4	64.9	895.6	659.9	335.0	7.0	1.000243
9500.0	724.4	11.5	66.3	882.4	658.8	344.1	6.6	1.000239
10000.0	711.4	10.6	67.7	869.3	657.8	348.1	6.0	1.000234
10500.0	698.5	9.7	69.1	856.5	656.6	337.6	4.9	1.000230
11000.0	685.7	8.6	69.5	844.3	655.3	316.4	4.4	1.000225
11500.0	673.2	7.5	70.0	832.3	653.9	291.4	4.9	1.000220
12000.0	660.9	6.4	70.5	820.5	652.6	283.4	5.3	1.000216
12500.0	648.8	5.2	71.0	808.8	651.2	278.6	5.5	1.000211
13000.0	636.7	4.3	69.2	796.6	650.1	278.6	5.4	1.000206
13500.0	624.9	3.4	67.3	784.6	648.9	274.9	4.9	1.000201
14000.0	613.3	2.5	65.5	772.7	647.8	266.6	4.4	1.000196
14500.0	601.9	1.8	50.0	760.8	646.7	256.9	4.1	1.000187
15000.0	590.5	.9	50.2	749.0	645.6	249.6	4.1	1.000183
15500.0	579.4	.0	51.6	737.5	644.5	254.4	4.7	1.000180
16000.0	568.5	-.7	45.2	725.6	643.6	256.4	5.3	1.000175
16500.0	557.8	-1.3	37.9	713.7	642.8	257.0	5.7	1.000170
17000.0	547.2	-2.4	57.3	702.6	641.7	257.4	6.3	1.000172
17500.0	536.7	-3.4	67.5	691.7	640.5	258.7	7.2	1.000171
18000.0	526.4	-4.4	60.3	681.1	639.3	261.5	8.6	1.000166



STATION ALTITUDE 3951.40 FEET MSL  
 5 OCT. 77  
 ASCENSION NO. 104  
 1045 HRS MDT  
 UPPER AIR DATA  
 2780050104  
 APACHE  
 TABLE VIII. (CONT)  
 GEODETIC COORDINATES  
 32.62700 LAT DEG  
 106.39352 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
18500.0	516.3	-5.4	53.0	670.6	638.0	261.8	9.6	1.000161
19000.0	506.4	-6.4	45.7	660.4	636.7	260.9	10.4	1.000156
19500.0	496.6	-7.4	42.5	650.3	635.4	259.2	10.4	1.000153
20000.0	486.9	-8.7	46.8	640.6	633.9	257.7	10.3	1.000151
20500.0	477.4	-9.9	51.0	631.1	632.4	261.6	11.0	1.000149
21000.0	468.1	-10.7	40.6	620.8	631.4	265.0	12.5	1.000144
21500.0	458.9	-11.4	25.9	610.5	630.4	266.9	16.1	1.000140
22000.0	449.8	-12.2	16.1	600.4	629.4	265.8	20.6	1.000136
22500.0	440.9	-13.2	16.4	590.7	628.2	263.4	26.0	1.000134
23000.0	432.1	-14.2	16.7	581.2	627.0	260.0	28.5	1.000131
23500.0	423.5	-15.2	16.9	571.8	625.8	256.3	30.0	1.000129
24000.0	415.0	-16.5	19.9	563.2	624.2	253.3	30.7	1.000127
24500.0	406.7	-18.0	31.2	555.0	622.4	250.5	31.2	1.000126
25000.0	398.4	-19.7	77.5	547.1	620.5	248.7	32.6	1.000128
25500.0	390.3	-19.8	55.3	536.3	620.3	247.1	34.1	1.000124
26000.0	382.3	-20.7	34.1	527.4	619.1	245.4	34.8	1.000120
26500.0	374.5	-21.7	34.5	518.6	617.9	243.9	35.6	1.000118
27000.0	366.8	-22.7	34.9	510.1	616.6	244.5	37.3	1.000116
27500.0	359.2	-23.9	31.9	501.9	615.1	245.2	38.9	1.000114
28000.0	351.8	-25.2	27.9	494.0	613.6	246.9	39.8	1.000111
28500.0	344.5	-26.5	27.2	486.3	611.9	248.2	40.5	1.000110
29000.0	337.2	-27.7	46.6	478.4	610.5	248.0	40.4	1.000108
29500.0	330.1	-28.6	62.7	470.2	609.3	247.5	41.0	1.000107
30000.0	323.2	-29.9	58.2	462.6	607.7	246.5	42.7	1.000105
30500.0	316.3	-31.3	62.4	455.5	605.9	246.4	44.2	1.000103
31000.0	309.5	-32.1	51.5	447.1	605.0	247.4	45.4	1.000101
31500.0	302.9	-32.3	26.9	438.0	604.6	249.4	47.1	1.000098
32000.0	296.3	-33.0	14.9**	429.9	603.7	252.8	49.9	1.000096
32500.0	289.9	-34.1	13.0**	422.4	602.4	254.7	52.6	1.000094
33000.0	283.5	-35.2	11.0**	415.0	601.0	254.6	55.7	1.000093

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3951.40 FEET MSL  
5 OCT. 77 1045 HRS MDT  
ASCENSION NO. 104

UPPER AIR DATA  
2780050104  
APACHE

GEODETIC COORDINATES  
32.62700 LAT DEG  
106.39352 LON DEG

TABLE VIII. (CONT)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
33500.0	277.4	-36.2	-57.4	9.1**	407.8	599.7	254.1	58.3	1.000091
34000.0	271.3	-37.3	-60.1	7.2**	400.7	598.3	252.2	59.3	1.000089
34500.0	265.4	-38.4	-63.3	5.2**	393.8	596.9	250.4	60.4	1.000088
35000.0	259.6	-39.5	-67.4	3.3**	387.0	595.5	250.1	60.8	1.000086
35500.0	253.9	-40.5	-74.2	1.4**	380.3	594.2	249.8	61.3	1.000085
36000.0	248.3	-41.7			373.7	592.7	249.1	61.7	1.000083
36500.0	242.6	-42.9			367.1	591.2	248.4	62.1	1.000082
37000.0	237.1	-44.1			360.6	589.6	247.5	63.0	1.000080
37500.0	231.7	-45.3			354.2	588.0	246.6	64.1	1.000079
38000.0	226.4	-46.5			348.0	586.4	245.9	65.3	1.000078
38500.0	221.2	-47.8			341.9	584.9	245.5	66.7	1.000076
39000.0	216.2	-49.0			335.9	583.3	245.2	68.1	1.000075
39500.0	211.2	-50.2			330.1	581.7	246.0	67.1	1.000074
40000.0	206.4	-51.4			324.3	580.1	246.8	66.0	1.000072
40500.0	201.7	-52.7			318.6	578.5	247.8	64.7	1.000071
41000.0	196.9	-53.9			312.8	576.9	249.0	63.1	1.000070
41500.0	192.1	-55.1			306.9	575.3	250.2	61.5	1.000068
42000.0	187.5	-56.3			301.1	573.7	251.2	64.2	1.000067
42500.0	182.9	-57.5			295.5	572.1	252.1	67.1	1.000066
43000.0	178.5	-58.7			289.9	570.5	252.8	69.6	1.000065
43500.0	174.2	-59.9			284.5	568.9	253.1	71.4	1.000063
44000.0	170.0	-61.1			279.2	567.3	253.3	73.2	1.000062
44500.0	165.8	-62.3			274.0	565.7	254.2	74.0	1.000061
45000.0	161.8	-63.5			268.9	564.1	255.3	74.4	1.000060
45500.0	157.9	-64.7			263.9	562.5	256.4	74.8	1.000059
46000.0	154.1	-65.9			259.0	560.9	257.6	75.0	1.000058
46500.0	150.4	-67.1			254.2	559.2	258.7	75.2	1.000057
47000.0	146.6	-68.2			249.1	557.7	259.0	75.2	1.000055
47500.0	142.8	-69.3			244.2	556.2	258.9	75.1	1.000054
48000.0	139.2	-70.5			239.3	554.6	258.9	75.0	1.000053

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.



STATION ALTITUDE 3951.40 FEET MSL  
5 OCT. 77 1045 HRS MDT  
ASCENSION NO. 104

UPPER AIR DATA  
2780050104  
APACHE  
TABLE VIII. (CONT)

GEODETIC COORDINATES  
32.62700 LAT DEG  
106.39352 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
48500.0	135.7	-71.6		234.5	553.1	258.8	73.9	1.000052
49000.0	132.2	-72.4		229.5	552.0	258.8	72.7	1.000051
49500.0	128.8	-72.9		224.1	551.3	258.8	71.0	1.000050
50000.0	125.5	-73.4		218.8	550.6	259.3	66.0	1.000049
50500.0	122.3	-73.9		213.7	549.9	259.9	61.1	1.000048
51000.0	119.1	-73.7		208.0	550.2	260.8	56.0	1.000046
51500.0	116.0	-72.9		201.8	551.3	262.2	50.1	1.000045
52000.0	113.0	-72.6		196.3	551.8	264.1	44.2	1.000044
52500.0	110.1	-72.9		191.6	551.3	266.1	39.0	1.000043
53000.0	107.3	-73.3		186.9	550.8	267.8	34.9	1.000042
53500.0	104.5	-73.6		182.4	550.3	269.9	30.9	1.000041
54000.0	101.8	-74.0		178.0	549.8	269.7	29.0	1.000040
54500.0	99.2	-74.2		173.7	549.5	266.9	29.0	1.000039
55000.0	96.6	-74.4		169.3	549.3	264.2	29.0	1.000038
55500.0	94.1	-74.5		165.0	549.1	263.3	28.2	1.000037
56000.0	91.6	-74.6		160.8	549.0	263.9	26.6	1.000036
56500.0	89.3	-74.7		156.7	548.8	264.6	25.1	1.000035
57000.0	87.0	-73.9		152.1	549.9	265.8	23.4	1.000034
57500.0	84.8	-73.1		147.6	551.0	268.2	21.4	1.000033
58000.0	82.6	-72.3		143.3	552.1	271.1	19.4	1.000032
58500.0	80.5	-71.5		139.1	553.2	272.8	17.9	1.000031
59000.0	78.4	-70.7		135.0	554.3	267.4	18.2	1.000030
59500.0	76.4	-69.9		131.0	555.4	262.2	18.6	1.000029
60000.0	74.5	-69.1		127.2	556.5	263.0	18.4	1.000028
60500.0	72.6	-68.3		123.4	557.6	270.5	17.8	1.000027
61000.0	70.7	-67.5		119.8	558.7	278.5	17.4	1.000027
61500.0	69.0	-66.7		116.4	559.8	286.9	14.9	1.000026
62000.0	67.3	-65.9		113.1	560.9	299.2	12.1	1.000025
62500.0	65.6	-65.1		109.9	562.0	316.0	10.0	1.000024
63000.0	64.0	-64.2		106.8	563.1	301.4	6.7	1.000024

UPPER AIR DATA  
2780050104  
APACHE  
TABLE VIII. (CONT)

STATION ALTITUDE 3951.40 FEET MSL  
5 OCT. 77 1045 HRS MDT  
ASCENSION NO. 104

GEODETIC COORDINATES  
32.62700 LAT DEG  
106.39352 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES(TN)	SPEED KNOTS	
63500.0	62.5	-63.4		103.8	564.2	267.8	4.6	1.000023
64000.0	60.9	-62.6		100.8	565.3	233.2	5.5	1.000022
64500.0	59.5	-61.8		98.0	566.4	228.0	8.1	1.000022
65000.0	58.0	-60.9		95.2	567.5	225.4	10.8	1.000021
65500.0	56.6	-60.1		92.5	568.6	226.6	9.9	1.000021
66000.0	55.2	-59.3		89.9	569.7	230.8	7.3	1.000020
66500.0	53.9	-58.5		87.4	570.8	239.3	5.0	1.000019
67000.0	52.5	-57.6		84.9	571.9	253.1	4.1	1.000019
67500.0	51.3	-56.8		82.5	573.0	272.5	3.6	1.000018
68000.0	50.0	-56.0		80.2	574.1	276.6	4.2	1.000018
68500.0	48.8	-55.9		78.3	574.2	272.0	5.3	1.000017
69000.0	47.7	-55.8		76.4	574.3	270.1	6.3	1.000017
69500.0	46.5	-55.7		74.5	574.5	279.4	5.4	1.000017
70000.0	45.4	-55.6		72.7	574.6	291.8	4.7	1.000016
70500.0	44.3	-55.5		71.0	574.7	321.8	3.7	1.000016
71000.0	43.3	-55.4		69.3	574.9	9.1	4.3	1.000015
71500.0	42.3	-55.3		67.6	575.0	32.4	6.6	1.000015
72000.0	41.3	-55.2		66.0	575.1	34.2	6.8	1.000015
72500.0	40.3	-55.1		64.4	575.3	35.9	7.1	1.000014
73000.0	39.3	-55.0		62.8	575.4	41.8	7.1	1.000014
73500.0	38.4	-54.9		61.3	575.5	52.7	7.1	1.000014
74000.0	37.5	-54.8		59.8	575.6	63.3	7.3	1.000013
74500.0	36.6	-54.7		58.4	575.8	79.7	9.4	1.000013
75000.0	35.7	-54.6		57.0	575.9	89.9	12.2	1.000013
75500.0	34.9	-54.5		55.6	576.0	93.6	14.6	1.000012
76000.0	34.1	-54.4		54.2	576.2	91.9	16.2	1.000012
76500.0	33.2	-54.3		52.9	576.3	90.4	17.7	1.000012
77000.0	32.5	-54.2		51.7	576.4	90.1	17.9	1.000012
77500.0	31.7	-54.1		50.4	576.6	90.1	17.7	1.000011
78000.0	30.9	-54.0		49.2	576.7	91.5	17.3	1.000011



STATION ALTITUDE 3951.40 FEET MSL  
5 OCT. 77 1045 HRS MDT  
ASCENSION NO. 104

UPPER AIR DATA  
2780050104  
APACHE  
TABLE VIII. (CONT)

GEODETIC COORDINATES  
32.62700 LAT NEG  
106.39352 LON NEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
78500.0	30.2	-53.9		48.0	576.8	98.2	16.6	1.000011
79000.0	29.5	-53.7		46.8	577.1	105.5	16.1	1.000010
79500.0	28.8	-53.4		45.7	577.5	109.9	15.9	1.000010
80000.0	28.1	-53.1		44.5	577.9	112.3	15.8	1.000010
80500.0	27.5	-52.9		43.5	578.2	114.7	15.7	1.000010
81000.0	26.8	-52.6		42.4	578.6	115.3	15.6	1.000009
81500.0	26.2	-52.3		41.3	579.0	115.5	15.4	1.000009
82000.0	25.6	-52.0		40.3	579.3	115.7	15.3	1.000009
82500.0	25.0	-51.7		39.3	579.7	113.0	14.4	1.000009
83000.0	24.4	-51.5		38.4	580.1	109.9	13.6	1.000009
83500.0	23.8	-51.2		37.4	580.4	106.7	12.9	1.000008
84000.0	23.3	-50.9		36.5	580.8	103.3	12.0	1.000008
84500.0	22.7	-50.6		35.6	581.2	99.5	11.3	1.000008
85000.0	22.2	-50.3		34.7	581.5	95.9	10.8	1.000008
85500.0	21.7	-50.1		33.9	581.9	93.1	10.8	1.000008
86000.0	21.2	-49.8		33.0	582.2	90.2	10.8	1.000007
86500.0	20.7	-49.5		32.2	582.6	91.0	11.9	1.000007
87000.0	20.2	-49.2		31.4	583.0	93.2	13.5	1.000007
87500.0	19.7	-49.0		30.7	583.3	94.8	15.2	1.000007
88000.0	19.3	-48.8		29.9	583.5	98.0	15.7	1.000007
88500.0	18.8	-48.7		29.2	583.7	101.2	16.0	1.000006
89000.0	18.4	-48.5		28.5	583.9	104.3	16.3	1.000006
89500.0	18.0	-48.3		27.9	584.1	106.9	15.1	1.000006
90000.0	17.6	-48.2		27.2	584.4	109.8	13.9	1.000006
90500.0	17.2	-48.0		26.5	584.6			1.000006
91000.0	16.8	-47.8		25.9	584.8			1.000006
91500.0	16.4	-47.6		25.3	585.0			1.000006
92000.0	16.0	-47.5		24.7	585.2			1.000005
92500.0	15.6	-47.3		24.1	585.5			1.000005
93000.0	15.3	-47.1		23.5	585.7			1.000005



STATION ALTITUDE 3951.40 FEET MSL  
5 OCT. 77 1045 HRS MDT  
ASCENSION NO. 104

MANDATORY LEVELS  
2780050104  
APACHE  
TABLE IX.

GEODETIC COORDINATES  
32.62700 LAT DEG  
106.39352 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PFCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5064.	17.2	15.0	87.	321.9	1.1
800.0	6759.	14.1	12.0	87.	282.3	7.6
750.0	8547.	13.2	6.5	64.	317.6	7.5
700.0	10443.	9.8	4.4	69.	338.9	5.0
650.0	12451.	5.4	.5	71.	278.6	5.6
600.0	14585.	1.7	-7.8	49.	254.9	4.1
550.0	16871.	-2.1	-10.6	52.	257.3	6.2
500.0	19336.	-7.0	-18.0	41.	259.8	10.5
450.0	22003.	-12.2	-32.7	16.	265.7	20.9
400.0	24922.	-19.8	-22.3	80.	248.9	32.5
350.0	28147.	-25.5	-38.9	27.	247.6	40.2
300.0	31756.	-32.4	-49.6	16.	251.5	48.8
250.0	35896.	-41.3			249.2	61.7
200.0	40741.	-53.1			248.6	63.6
175.0	43523.	-59.6			253.1	71.8
150.0	46630.	-67.2			259.0	75.3
125.0	50174.	-73.5			259.7	63.1
100.0	54458.	-74.2			266.4	29.0
80.0	58735.	-71.3			268.5	18.1
70.0	61351.	-67.2			287.6	14.7
60.0	64440.	-62.1			227.1	8.9
50.0	68191.	-56.0			272.6	5.1
40.0	72858.	-55.1			44.3	7.1
30.0	78903.	-53.9			108.5	16.0
25.0	82763.	-51.7			109.3	13.5
20.0	87539.	-49.1			97.4	15.6
15.0	93762.	-47.0				

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4126.59 FEET MSL  
5 OCT. 77  
ASCENSION NO. 702

SIGNIFICANT LEVEL DATA  
2780010702  
HOLLOMAN  
TABLE X.

GEODETIC COORDINATES  
32.88865 LAT NEG  
106.09965 LON NEG

PRESSURE GEOMETRIC		TEMPERATURE		REL. HUM. PERCENT
MILLIBARS	ALTITUDE MSL FEET	AIR DEGREES	DEWPOINT CENTIGRADE	
879.1	4126.6	21.1	14.5	66.0
850.0	5083.1	17.6	13.1	75.0
802.4	6693.7	13.8	12.9	94.0
788.5	7177.3	12.4	8.5	77.0
772.3	7750.9	13.5	7.7	68.0
734.3	9142.5	12.2	-2.4	36.0
700.0	10450.9	9.5	-3.4	40.0
638.3	12938.3	4.4	-9.3	36.0
621.3	13657.7	3.7	-25.0	10.0
595.3	14791.5	1.9	-10.2	40.0
562.3	16292.6	-6	-18.6	24.0
528.3	17912.3	-5.2	-14.7	47.0
500.0	19324.3	-7.2	-23.8	25.0
472.3	20769.8	-10.9	-21.0	43.0
465.3	21145.5	-11.3	-30.8	18.0
444.8	22273.0	-13.6	-27.8	29.0
434.8	22838.0	-14.8	-39.5	10.0
400.0	24888.9	-19.0	-42.9	10.0
392.3	25361.3	-20.5	-36.6	22.0
385.3	25797.4	-20.9	-28.3	51.0
359.8	27444.2	-24.0	-46.8	10.0
341.3	28698.0	-26.9	-49.1	10.0
310.3	30918.6	-32.9		
300.0	31695.4	-33.3		
250.0	35815.3	-41.4		
200.0	40641.7	-53.3		
173.8	43552.6	-60.0		
150.0	46513.8	-66.2		
126.3	49876.1	-71.5		
116.3	51472.7	-70.2		

STATION ALTITUDE 4126.59 FEET MSL  
 5 OCT. 77 1045 HRS MDT  
 ASCENSION NO. 702

SIGNIFICANT LEVEL DATA  
 2730010702  
 HOLLOMAN  
 TABLE X. (CONT)

GEODETIC COORDINATES  
 32.88865 LAT DEG  
 106.09965 LON DEG

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
100.0 54390.4	-72.1	
90.0 56410.6	-73.2	
70.0 61291.4	-66.8	
50.0 68095.7	-56.2	
30.0 78739.0	-53.6	
20.0 87333.9	-48.2	
10.0 102413.0	-41.4	
9.0 104739.7	-40.9	



STATION ALTITUDE 4126.59 FEET MSL  
5 OCT. 77  
ASCENSION NO. 702

1045 HRS MDT

UPPER AIR DATA  
2780010702  
HOLLOMAN  
TABLE XI.

GEODETIC COORDINATES  
32.88865 LAT DEG  
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN) SPEED KNOTS	INDEX OF REFRACTION
4126.6	879.1	21.1	66.0	1033.4	670.7	.0	1.000303
4500.0	867.6	19.7	69.5	1024.8	669.1		1.000299
5000.0	852.5	17.9	74.2	1013.5	666.9		1.000294
5500.0	837.4	16.6	79.9	999.9	665.4		1.000291
6000.0	822.6	15.4	85.8	986.1	664.1		1.000288
6500.0	808.0	14.3	91.7	972.5	662.8		1.000285
7000.0	793.6	12.9	83.2	960.7	660.9		1.000272
7500.0	779.3	13.0	71.9	943.8	660.8		1.000260
8000.0	765.4	13.3	62.3	926.5	660.9		1.000250
8500.0	751.6	12.8	50.8	912.2	660.0		1.000238
9000.0	738.1	12.3	39.3	898.1	659.2		1.000226
9500.0	724.8	11.5	37.1	884.8	658.1		1.000221
10000.0	711.6	10.4	38.6	871.9	656.9		1.000217
10500.0	698.7	9.4	39.9	859.3	655.7		1.000214
11000.0	685.9	8.4	39.1	846.7	654.4		1.000209
11500.0	673.3	7.3	38.3	834.3	653.2		1.000205
12000.0	660.9	6.3	37.5	822.1	651.9		1.000201
12500.0	648.8	5.3	36.7	810.1	650.7		1.000196
13000.0	636.8	4.3	33.8	798.1	649.5		1.000192
13500.0	625.0	3.9	15.7	785.4	648.6		1.000181
14000.0	613.3	3.2	19.1	772.6	647.9		1.000179
14500.0	601.9	2.4	32.3	759.9	647.1		1.000181
15000.0	590.6	1.6	37.8	747.7	646.2		1.000180
15500.0	579.5	.7	32.4	736.1	645.2		1.000175
16000.0	568.6	-.1	27.1	724.7	644.1		1.000170
16500.0	557.8	-1.2	26.9	713.8	642.8		1.000167
17000.0	547.2	-2.6	34.0	703.8	641.2		1.000166
17500.0	536.8	-4.0	41.1	693.9	639.5		1.000164
18000.0	526.5	-5.3	45.6	683.9	638.0		1.000162
18500.0	516.3	-6.0	37.8	672.7	637.1		1.000158

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

GEODETIC COORDINATES  
32.88865 LAT DEG  
106.09965 LON DEG

UPPER AIR DATA  
2780010702  
HOLLOMAN  
TABLE XI. (CONT)

STATION ALTITUDE 4126.59 FEET MSL  
5 OCT. 77 1045 HRS MDT  
ASCENSION NO. 702

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	WIND DATA		INDEX OF REFRACTION
					DIRECTION DEGREES(TN)	SPEED KNOTS	
19000.0	506.4	-6.7	30.1	661.6	256.6	13.6	1.000153
19500.0	496.5	-7.6	27.2	651.1	255.4	14.2	1.000150
20000.0	486.9	-8.9	33.4	641.4	255.3	14.1	1.000149
20500.0	477.4	-10.2	39.6	631.9	256.0	13.5	1.000147
21000.0	468.0	-11.1	27.7	621.9	261.0	13.3	1.000143
21500.0	458.8	-12.0	21.5	611.8	267.8	13.5	1.000139
22000.0	449.7	-13.0	26.3	602.0	269.8	16.3	1.000137
22500.0	440.8	-14.1	21.4	592.5	270.1	19.9	1.000134
23000.0	431.9	-15.1	10.0	583.1	267.2	22.1	1.000131
23500.0	423.2	-16.2	10.0	573.6	264.1	24.1	1.000129
24000.0	414.7	-17.2	10.0	564.3	260.0	25.6	1.000127
24500.0	406.4	-18.2	10.0	555.2	256.2	27.2	1.000125
25000.0	398.2	-19.4	12.8	546.5	251.6	29.8	1.000123
25500.0	390.1	-20.6	31.2	537.9	247.7	32.6	1.000122
26000.0	382.1	-21.3	46.0	528.2	245.0	33.8	1.000121
26500.0	374.2	-22.2	33.5	519.3	243.0	35.1	1.000118
27000.0	366.5	-23.2	21.1	510.6	244.9	36.8	1.000115
27500.0	359.0	-24.1	10.0	502.1	246.6	38.4	1.000112
28000.0	351.5	-25.3	10.0	494.0	247.9	38.6	1.000110
28500.0	344.2	-26.4	10.0	485.9	249.1	38.8	1.000109
29000.0	336.9	-27.7	8.6**	478.2	249.1	39.1	1.000107
29500.0	329.8	-29.1	6.4**	470.6	249.0	39.5	1.000105
30000.0	322.8	-30.4	4.1**	463.2	248.3	40.6	1.000103
30500.0	315.9	-31.8	1.9**	455.9	248.0	41.8	1.000102
31000.0	309.2	-32.9		448.4	250.0	43.4	1.000100
31500.0	302.6	-33.2		439.3	251.9	45.5	1.000098
32000.0	296.0	-33.9		431.0	254.4	49.6	1.000096
32500.0	289.5	-34.9		423.3	256.1	53.5	1.000094
33000.0	283.2	-35.9		415.7	255.4	56.1	1.000093
33500.0	277.0	-36.8		408.3	254.6	58.3	1.000091

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.



UPPER AIR DATA  
2780010702  
HOLLOMAN  
TABLE XI. (CONT)

GEODETIC COORDINATES  
32.88865 LAT NEG  
106.09965 LON NEG

STATION ALTITUDE 4126.59 FEET MSL  
5 OCT. 77  
ASCENSION NO. 702  
1045 HRS MDT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	KNOTS	DIRECTION DEGREES(TN)	SPEED KNOTS	
34000.0	270.9	-37.8			401.1	597.6		252.6	59.3	1.000009
34500.0	265.0	-38.8			393.9	596.4		250.7	60.5	1.000008
35000.0	259.2	-39.8			386.9	595.1		249.0	62.0	1.000006
35500.0	253.5	-40.8			380.1	593.9		247.6	63.6	1.000005
36000.0	247.9	-41.9			373.3	592.5		247.2	65.0	1.000003
36500.0	242.2	-43.1			366.8	590.9		246.9	65.3	1.000002
37000.0	236.7	-44.3			360.3	589.3		246.5	61.1	1.000000
37500.0	231.3	-45.6			354.0	587.7		246.3	58.1	1.000007
38000.0	226.0	-46.8			347.8	586.1		246.8	59.1	1.000007
38500.0	220.8	-48.0			341.7	584.5		247.5	61.2	1.000006
39000.0	215.8	-49.3			335.7	582.9		248.6	68.4	1.000005
39500.0	210.8	-50.5			329.9	581.3		249.5	74.7	1.000003
40000.0	206.0	-51.7			324.1	579.7		250.0	72.8	1.000002
40500.0	201.3	-53.0			318.5	578.1		250.6	70.9	1.000001
41000.0	196.6	-54.1			312.7	576.6		250.9	64.8	1.000000
41500.0	191.9	-55.3			306.8	575.0		251.2	58.4	1.000008
42000.0	187.3	-56.4			301.1	573.5		252.3	57.5	1.000007
42500.0	182.9	-57.6			295.5	572.0		253.5	58.5	1.000006
43000.0	178.5	-58.7			290.0	570.5		255.0	62.0	1.000005
43500.0	174.2	-59.9			284.6	568.9		256.5	67.3	1.000003
44000.0	170.0	-60.9			279.0	567.5		257.3	71.2	1.000002
44500.0	165.8	-62.0			273.5	566.1		257.4	73.0	1.000001
45000.0	161.7	-63.0			268.1	564.7		257.5	75.3	1.000000
45500.0	157.8	-64.1			262.9	563.3		257.7	78.4	1.000009
46000.0	153.9	-65.1			257.7	561.9		258.2	81.6	1.000007
46500.0	150.1	-66.2			252.6	560.5		259.9	85.0	1.000006
47000.0	146.3	-67.0			247.2	559.4		261.3	86.9	1.000005
47500.0	142.6	-67.8			241.9	558.3		262.0	82.4	1.000004
48000.0	139.0	-68.5			236.7	557.3		262.8	77.3	1.000003
48500.0	135.5	-69.3			231.6	556.2		263.1	67.7	1.000002



STATION ALTITUDE 4126.59 FEET MSL  
5 OCT. 77  
ASCENSION NO. 702

UPPER AIR DATA  
2780010702  
HOLLOMAN  
TABLE XI. (CONT)

GEODETIC COORDINATES  
32.88865 LAT DEG  
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	KNOTS	DIRECTION DEGREES(TN)	SPEED KNOTS	
49000.0	132.1	-70.1			226.6	555.1		263.6	58.1	1.000050
49500.0	128.8	-70.9			221.8	554.0		263.6	62.0	1.000049
50000.0	125.5	-71.4			216.7	553.4		263.6	66.3	1.000048
50500.0	122.3	-71.0			210.7	553.9		263.7	65.2	1.000047
51000.0	119.2	-70.6			205.0	554.5		263.9	63.0	1.000046
51500.0	116.1	-70.2			199.4	555.0		265.0	55.3	1.000044
52000.0	113.2	-70.5			194.6	554.5		267.1	45.6	1.000043
52500.0	110.3	-70.9			189.9	554.1		268.5	39.2	1.000042
53000.0	107.5	-71.2			185.4	553.6		269.3	34.6	1.000041
53500.0	104.7	-71.5			180.9	553.2		269.0	30.8	1.000040
54000.0	102.0	-71.8			176.6	552.7		266.1	28.7	1.000039
54500.0	99.4	-72.2			172.3	552.3		262.9	26.7	1.000038
55000.0	96.9	-72.4			168.1	551.9		262.9	27.2	1.000037
55500.0	94.4	-72.7			164.0	551.6		262.9	27.8	1.000037
56000.0	91.9	-73.0			160.0	551.2		264.8	25.3	1.000036
56500.0	89.6	-73.1			156.0	551.0		268.2	21.6	1.000035
57000.0	87.3	-72.4			151.5	551.9		271.2	18.8	1.000034
57500.0	85.1	-71.8			147.2	552.8		273.3	16.6	1.000033
58000.0	82.9	-71.1			143.0	553.7		275.3	15.0	1.000032
58500.0	80.8	-70.5			138.9	554.6		275.7	14.8	1.000031
59000.0	78.8	-69.8			134.9	555.5		276.1	14.7	1.000030
59500.0	76.8	-69.1			131.1	556.4		276.9	14.9	1.000029
60000.0	74.8	-68.5			127.3	557.3		277.6	15.0	1.000028
60500.0	72.9	-67.8			123.7	558.2		277.3	14.9	1.000028
61000.0	71.1	-67.2			120.2	559.1		276.8	14.7	1.000027
61500.0	69.3	-66.5			116.8	560.1		275.0	14.1	1.000026
62000.0	67.6	-65.7			113.5	561.1		272.2	13.3	1.000025
62500.0	65.9	-64.9			110.3	562.2		268.7	12.2	1.000025
63000.0	64.3	-64.1			107.2	563.2		263.9	10.6	1.000024
63500.0	62.8	-63.4			104.2	564.3		257.3	9.0	1.000023

STATION ALTITUDE 4126.59 FEET MSL  
5 OCT. 77  
ASCENSION NO. 702

UPPER AIR DATA  
2780010702  
HOLLOMAN  
TABLE XI. (CONT)

GEODETIC COORDINATES  
32.88865 LAT NEG  
106.09965 LON NEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
64000.0	61.2	-62.6		101.3	565.3	244.0	8.9	1.000023
64500.0	59.7	-61.8		98.5	566.4	231.0	9.3	1.000022
65000.0	58.3	-61.0		95.7	567.4	228.2	8.9	1.000021
65500.0	56.8	-60.2		93.0	568.4	229.7	8.0	1.000021
66000.0	55.5	-59.5		90.4	569.5	235.0	6.7	1.000020
66500.0	54.1	-58.7		87.9	570.5	251.7	4.8	1.000020
67000.0	52.8	-57.9		85.4	571.6	279.0	3.7	1.000019
67500.0	51.5	-57.1		83.0	572.6	269.7	3.3	1.000018
68000.0	50.2	-56.3		80.7	573.6	258.3	3.0	1.000018
68500.0	49.0	-56.1		78.7	574.0	267.4	3.8	1.000018
69000.0	47.9	-56.0		76.8	574.1	274.4	4.9	1.000017
69500.0	46.7	-55.9		74.9	574.3	285.2	5.8	1.000017
70000.0	45.6	-55.7		73.1	574.4	295.2	6.9	1.000016
70500.0	44.6	-55.6		71.3	574.6	315.2	5.9	1.000016
71000.0	43.5	-55.5		69.6	574.8	8.8	5.4	1.000015
71500.0	42.5	-55.4		67.9	574.9	39.4	8.1	1.000015
72000.0	41.5	-55.2		66.3	575.1	48.3	10.3	1.000015
72500.0	40.5	-55.1		64.7	575.2	53.9	12.5	1.000014
73000.0	39.5	-55.0		63.1	575.4	55.4	11.5	1.000014
73500.0	38.6	-54.9		61.6	575.6	57.2	10.6	1.000014
74000.0	37.7	-54.8		60.1	575.7	62.5	10.3	1.000013
74500.0	36.8	-54.6		58.6	575.9	73.1	11.2	1.000013
75000.0	35.9	-54.5		57.2	576.0	81.9	12.3	1.000013
75500.0	35.0	-54.4		55.8	576.2	90.2	12.4	1.000012
76000.0	34.2	-54.3		54.5	576.4	99.8	11.9	1.000012
76500.0	33.4	-54.1		53.1	576.5	109.9	11.8	1.000012
77000.0	32.6	-54.0		51.8	576.7	118.0	10.9	1.000012
77500.0	31.8	-53.9		50.6	576.8	127.0	10.1	1.000011
78000.0	31.1	-53.8		49.4	577.0	136.0	9.6	1.000011
78500.0	30.3	-53.7		48.2	577.2	133.8	10.6	1.000011



UPPER AIR DATA  
2780010702  
HOLLOMAN  
TABLE XI. (CONT)

STATION ALTITUDE 4126.59 FEET MSL  
5 OCT. 77 1045 HRS MDT  
ASCENSION NO. 702

GEODETIC COORDINATES  
32.88865 LAT NEG  
106.09965 LON NEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE					DIRECTION DEGREES(TN)	SPEED KNOTS	
79000.0	29.6	-53.4			47.0	577.5		131.9	11.5	1.000010
79500.0	28.9	-53.1			45.8	577.9		126.3	12.6	1.000010
80000.0	28.3	-52.8			44.7	578.3		114.8	14.6	1.000010
80500.0	27.6	-52.5			43.6	578.7		106.3	17.1	1.000010
81000.0	27.0	-52.2			42.5	579.1		100.6	18.8	1.000009
81500.0	26.3	-51.9			41.5	579.5		96.4	19.8	1.000009
82000.0	25.7	-51.6			40.4	579.9		92.6	21.0	1.000009
82500.0	25.1	-51.2			39.4	580.3		91.1	20.9	1.000009
83000.0	24.5	-50.9			38.5	580.8		91.1	20.0	1.000009
83500.0	24.0	-50.6			37.5	581.2		91.2	19.0	1.000008
84000.0	23.4	-50.3			36.6	581.6		92.0	17.4	1.000008
84500.0	22.9	-50.0			35.7	582.0		93.4	15.2	1.000008
85000.0	22.3	-49.7			34.8	582.4		95.3	13.1	1.000008
85500.0	21.8	-49.4			33.9	582.8		97.1	11.6	1.000008
86000.0	21.3	-49.0			33.1	583.2		98.9	10.4	1.000007
86500.0	20.8	-48.7			32.3	583.6		101.3	9.2	1.000007
87000.0	20.3	-48.4			31.5	584.0		104.0	9.4	1.000007
87500.0	19.8	-48.1			30.7	584.4		106.3	10.3	1.000007
88000.0	19.4	-47.9			30.0	584.7		108.2	11.2	1.000007
88500.0	19.0	-47.7			29.3	585.0		110.8	12.5	1.000007
89000.0	18.5	-47.4			28.6	585.3		113.3	13.9	1.000006
89500.0	18.1	-47.2			27.9	585.6		115.3	15.4	1.000006
90000.0	17.7	-47.0			27.3	585.9		114.9	15.9	1.000006
90500.0	17.3	-46.8			26.6	586.2		113.4	15.8	1.000006
91000.0	16.9	-46.5			26.0	586.4		111.8	15.8	1.000006
91500.0	16.5	-46.3			25.4	586.7		109.1	15.4	1.000006
92000.0	16.1	-46.1			24.8	587.0		105.4	14.9	1.000006
92500.0	15.8	-45.9			24.2	587.3		101.5	14.5	1.000005
93000.0	15.4	-45.6			23.6	587.6		98.4	14.4	1.000005
93500.0	15.1	-45.4			23.0	587.9		96.2	14.6	1.000005



UPPER AIR DATA  
2780010702  
HOLLOMAN  
TABLE XI. (CONT)

GEODETIC COORDINATES  
32.88865 LAT DEG  
106.09965 LON DEG

STATION ALTITUDE 4126.59 FEET MSL  
5 OCT. 77 1045 HRS MDT  
ASCENSION NO. 702

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
94000.0	14.7	-45.2		22.5	588.2	94.0	14.8	1.000005
94500.0	14.4	-45.0		22.0	588.5	89.9	14.8	1.000005
95000.0	14.1	-44.7		21.4	588.8	82.6	14.7	1.000005
95500.0	13.7	-44.5		20.9	589.1	75.4	14.8	1.000005
96000.0	13.4	-44.3		20.4	589.4	70.1	15.0	1.000005
96500.0	13.1	-44.1		20.0	589.6	75.3	14.5	1.000004
97000.0	12.8	-43.8		19.5	589.9	80.8	14.2	1.000004
97500.0	12.5	-43.6		19.0	590.2	86.5	13.9	1.000004
98000.0	12.2	-43.4		18.6	590.5	95.7	15.1	1.000004
98500.0	12.0	-43.2		18.1	590.8	103.6	16.8	1.000004
99000.0	11.7	-42.9		17.7	591.1	110.0	18.8	1.000004
99500.0	11.4	-42.7		17.3	591.4	111.8	19.5	1.000004
100000.0	11.2	-42.5		16.9	591.7	111.8	19.4	1.000004
100500.0	10.9	-42.3		16.5	592.0	111.7	19.3	1.000004
101000.0	10.7	-42.0		16.1	592.3	110.8	18.8	1.000004
101500.0	10.4	-41.8		15.7	592.5	108.3	17.4	1.000003
102000.0	10.2	-41.6		15.3	592.8	105.5	16.2	1.000003
102500.0	10.0	-41.4		15.0	593.1			1.000003
103000.0	9.7	-41.3		14.6	593.2			1.000003
103500.0	9.5	-41.2		14.3	593.4			1.000003
104000.0	9.3	-41.1		14.0	593.5			1.000003
104500.0	9.1	-41.0		13.6	593.6			1.000003

STATION ALTITUDE 4126.59 FEET MSL  
5 OCT. 77  
ASCENSION NO. 702

MANDATORY LEVELS  
2780010702  
HOLLOMAN  
TABLE XII.

GEODETIC COORDINATES  
32.88865 LAT NEG  
106.09965 LON NEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5082.	17.6	13.1	75.	9999.0	9999.0XX
800.0	6776.	13.6	12.1	91.	353.4	1.9
750.0	8560.	12.7	2.4	49.	345.8	6.5
700.0	10451.	9.5	-3.4	40.	349.2	6.0
650.0	12454.	5.4	-8.2	37.	322.4	2.7
600.0	14587.	2.2	-11.8	34.	268.8	2.5
550.0	16876.	-2.2	-16.6	32.	251.7	6.0
500.0	19333.	-7.2	-23.8	25.	255.7	14.1
450.0	21996.	-13.0	-28.3	26.	269.8	16.4
400.0	24907.	-19.0	-42.9	10.	252.1	29.5
350.0	28127.	-25.5	-48.0	10.	248.3	38.7
300.0	31729.	-33.3			253.4	47.8
250.0	35861.	-41.4			247.3	64.8
200.0	40703.	-53.3			250.8	67.6
175.0	43483.	-59.7			256.7	68.1
150.0	46597.	-66.2			260.5	86.4
125.0	50174.	-71.3			263.6	66.1
100.0	54508.	-72.1			262.9	26.8
80.0	58818.	-70.2			276.0	14.7
70.0	61444.	-66.8			274.3	13.9
60.0	64537.	-61.9			227.5	9.3
50.0	68288.	-56.2			267.6	3.9
40.0	72953.	-55.1			56.1	11.2
30.0	79002.	-53.6			130.9	12.0
25.0	82870.	-51.2			91.2	19.6
20.0	87662.	-48.2			108.4	11.3
15.0	93920.	-45.4			92.1	14.9
10.0	102872.	-41.4				